Number of Terms.	Mid-Term or Pair of Mid-Terms.	The Series.
1	15	15
3	5	$4+5+6$
5	3	$1+2+3+4+5$
15	1	$-6-5-4-3-2-1+0+1+2+3+4+5+6+7+8$
2	7,8	$7+8$
6	2,3	$0+1+2+3+4+5$
10	1,2	$-3-2-1+0+1+2+3+4+5+6$
30	0,1	$-14-13-\ .\ .\ .\ +0+1\ .\ .\ .\ +14+15$

NOTE ON PRIME NUMBERS.

By DERRICK N. LEHMER, University of California.

It is a well known theorem that it is possible to find an arbitrarily great number of consecutive composite numbers. This appears from the values which the expression $n!+r$ takes for $r=2, 3, ..., n$. This theorem furnishes an interesting proof of the theorem that the number of primes less than or equal to x is not determined by a function of x which is a polynomial in x of finite degree. For if $f(x)$ were such a function of degree n, then for $x=(n+2)!+r$, $f(x)$ must keep the same value for $r=2, 3, 4, ..., n+2$. If this value is k, then $f(x)-k=0$ is an equation of degree n with $n+1$ roots, which is impossible.

DEPARTMENTS.

SOLUTIONS OF PROBLEMS.

ALGEBRA.

362. Proposed by JAMES F. LAWRENCE, Stillwater, Okla.

Show that the number of solutions in positive integers, zero included, of the equation $x+2y+3z=6n$, is $3n^2+3n+1$.

Solution by W. J. GREENSTREET, M. A., Editor of the Mathematical Gazette, Burghfield, England.

$x+2y+3z=6n$. z may have any value from 0 to $2n$, inclusive.

Hence we may assign to it any even or odd value from 0 to $2n$, inclusive.